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PCT/FR2003/003629

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RS 331 - ER/MM	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/FR2003/003629	International filing date (*day/month/year*) 09 décembre 2003 (09.12.2003)	Priority date (*day/month/year*) 10 décembre 2002 (10.12.2002)
International Patent Classification (IPC) or national classification and IPC C12N 15/29		
Applicant SOCIETE DE CONSEILS DE RECHERCHES ET D'APPLICATIONS SCIENTIFIQUES (S.C.R.A.S.)		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 24 juin 2004 (24.06.2004)	Date of completion of this report 09 March 2005 (09.03.2005)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/FR2003/003629

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-41, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☒ the claims:

pages 1-18, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	4-9, 11-15	YES
	Claims	6	NO
Inventive step (IS)	Claims	4-9, 11-15	YES
	Claims	1-3, 10, 16-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO

2. Citations and explanations

Reference is made to the following document:

D1: WO 02/068461 A (THURIEAU CHRISTOPHE; FERRANDIS ERIC (FR); TENG BENG POON (FR); SOD) 6 September 2002 (2002-09-06).

Document D1, which is considered to be the closest prior art, describes the isolation of a protein called heterocarpin from *Pilocarpus heterophyllus* plant cells. This protein has a molecular weight of approximately 90.9 kDa and comprises fragments of the peptide sequences, SEQUENCE ID Nos 1-3. Said protein can be in a glycosylated or non-glycosylated form (D1, claims 1 and 2).

Moreover, D1 discloses that heterocarpin binds human GHRH and can be used to antagonise the effects of GHRH, to treat proliferative diseases (cancer), and to treat diabetic retinopathies and nephropathies (D1, claims 3, and 6-10).

1. The present application does not fulfil the requirements set forth in PCT Article 33(1) because the subject matter of claim 6 does not comply with

the requirement of novelty defined in PCT Article 33(2) and the subject matter of claims 1-3, 10 and 16-18 does not involve an inventive step as defined in PCT Article 33(3).

1.1 The peptide fragments (SEQUENCE ID Nos 1-3) mentioned in D1 correspond to the peptide fragments (SEQUENCE ID Nos 1-3) in the present application.

The protein having SEQUENCE ID NO 14 differs from the protein having SEQUENCE ID NO 10 in that the former protein has an N terminal extension of 9 amino acids and the C terminus comprises a histidine tag.

Furthermore, the heterocarpin, in other words the protein having SEQUENCE ID NO 10, is coded by the fragment of the polynucleotide having the polynucleotide sequence SEQUENCE ID NO 8 contained between the bases in positions 115 (ATG initiator codon) and 2437 (UAA stop codon), i.e. by the polynucleotide sequence SEQUENCE ID NO 9 (the description, page 9).

It follows that the protein having SEQUENCE ID NO 10 corresponds to the heterocarpin protein described in D1.

1.2 In light of the above, claim 6 does not fulfil the requirements set forth in PCT Article 33(2) because the peptide fragments are already disclosed in D1 (SEQUENCE ID Nos 1-3).

1.3 The observations set out below apply to SEQUENCE ID Nos 8 and 9 coding for the protein having SEQUENCE

ID NO 10.

In view of the description in the present application, it appears that a person skilled in the art would have experienced no particular difficulty in cloning heterocarpin.

In light of the great medical interest of heterocarpin, a person skilled in the art, aware of the information disclosed in D1, would have cloned heterocarpin without having to exercise any inventive skill.

As a result, the subject matter of claims 1-3, 10 and 16-18 does not involve an inventive step (PCT Article 33(3)).

1.4 In view of D1, which constitutes the closest prior art, and the documents cited in the search report, the subject matter of claims 4-9 and 11-15 was not disclosed or suggested before the priority date of the present international application. It follows that said claims fulfil the requirements set forth in PCT Article 33(2) and 33(3).

2.1 The preparation of an antibody or a fragment for binding the antigen thereof, that specifically binds the protein having SEQUENCE ID NO 14 but not the protein having SEQUENCE ID NO 10 is not disclosed in the present application. As a result, claim 11 does not fulfil the requirements set forth in PCT Article 5.

2.2 What is more, in view of pages 3-5, the subject matter of claim 11 is not consistent with the

description. In addition, the description *per se* is not consistent (see page 3-5 and 2 of the description) (PCT Article 6).